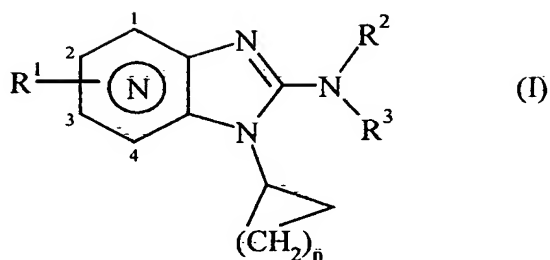


# CLAIMS

1- Compounds of formula (I):



5 wherein:

- R¹ represents a hydrogen atom, a halogen atom or an alkyl, polyhaloalkyl, cyano, nitro, hydroxycarbonyl, alkoxycarbonyl, aminocarbonyl, alkylaminocarbonyl or dialkylaminocarbonyl group,

- R² represents a hydrogen atom, an alkyl group, an optionally substituted aryl group, an optionally substituted heteroaryl group, or a group R²⁰-C(X)- wherein:

- R²⁰ represents an alkyl group, an alkoxy group, an amino group, an alkylamino group, a dialkylamino group, an optionally substituted aryl group or an optionally substituted heteroaryl group,

- X represents an oxygen atom, a sulphur atom, or a group NR²¹ wherein R²¹ represents a hydrogen atom or an alkyl group,

- R³ represents a hydrogen atom or an alkyl group,

- n represents an integer from 1 to 6 inclusive,

- the representation  $R^1$  means: means:

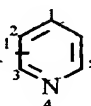
their enantiomers, diastereoisomers and also addition salts thereof with a pharmaceutically acceptable acid or base,

it being understood that:

- the term "alkyl" denotes a linear or branched hydrocarbon chain containing from 1 to 6 carbon atoms,
- 5 - the term "alkoxy" denotes an alkyl-oxy group in which the alkyl chain, which is linear or branched, contains from 1 to 6 carbon atoms,
- the term "aryl" denotes a phenyl or biphenyl group,
- the term "polyhaloalkyl" denotes a linear or branched carbon chain containing from 1 to 3 carbon atoms and from 1 to 7 halogen atoms,
- 10 - the term "heteroaryl" denotes a group having from 5 to 11 ring members which is monocyclic or bicyclic, in which at least one of the rings is aromatic, and which contains in the monocyclic ring system or in the bicyclic ring system 1, 2 or 3 hetero atoms selected from nitrogen, oxygen and sulphur, and
- the expression "optionally substituted" associated with the expressions aryl and hetero-  
15 aryl means that the groups in question are substituted by one or two identical or different substituents selected from halogen atoms and the groups alkyl, alkoxy, polyhaloalkyl, hydroxy, cyano, nitro, amino (optionally substituted by one or two alkyl groups) and -C(O)R<sub>d</sub> wherein R<sub>d</sub> represents a group selected from hydroxy, alkoxy and amino, it  
20 being understood that the heteroaryl group may also be substituted by an oxo group on the non-aromatic moiety of the heteroaryl.

2- Compounds of formula (I) according to claim 1 wherein the representation



corresponds to , their enantiomers, diastereoisomers and also addition salts thereof with a pharmaceutically acceptable acid or base.

3- Compounds of formula (I) according to either claim 1 or claim 2 wherein R<sup>1</sup> represents  
25 a hydrogen atom, their enantiomers, diastereoisomers and also addition salts thereof with a pharmaceutically acceptable acid or base.

4- Compounds of formula (I) according to any one of claims 1 to 3 wherein R<sup>2</sup> represents a hydrogen atom, their enantiomers, diastereoisomers and also addition salts thereof with a


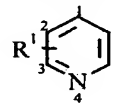
pharmaceutically acceptable acid or base.

5- Compounds of formula (I) according to any one of claims 1 to 3 wherein  $R^2$  represents a group  $R^{20}-C(O)-$ , their enantiomers, diastereoisomers and also addition salts thereof with a pharmaceutically acceptable acid or base.

5     6- Compounds of formula (I) according to any one of claims 1 to 5 wherein  $R^3$  represents a hydrogen atom, their enantiomers, diastereoisomers and also addition salts thereof with a pharmaceutically acceptable acid or base.

10     7- Compounds of formula (I) according to any one of claims 1 to 3, 5 or 6 wherein  $R^{20}$  represents an alkoxy group, their enantiomers, diastereoisomers and also addition salts thereof with a pharmaceutically acceptable acid or base.

8- Compounds of formula (I) according to any one of claims 1 to 7 wherein n represents an integer from 4 to 6 inclusive, their enantiomers, diastereoisomers and also addition salts thereof with a pharmaceutically acceptable acid or base.

15     9- Compounds of formula (I) according to any one of claims 1 to 8 wherein  represents ,  $R^1$  represents a hydrogen atom,  $R^2$  represents a hydrogen atom

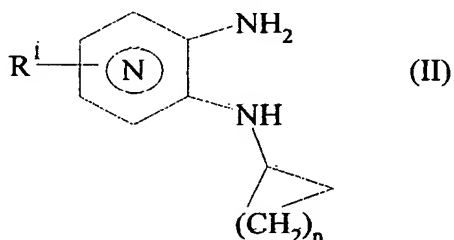
or a group  $R^{20}-C(O)-$  wherein  $R^{20}$  represents an alkoxy group, and n is 4 or 5, their enantiomers, diastereoisomers and also addition salts thereof with a pharmaceutically acceptable acid or base.

20     10- Compound of formula (I) according to any one of claims 1 to 4, 6, 8 or 9 which is 3-cycloheptyl-3*H*-imidazo[4,5-*b*]pyridine-2-amine.

11- Compound of formula (I) according to any one of claims 1 to 4, 6 or 8 which is 3-cyclooctyl-3*H*-imidazo[4,5-*b*]pyridine-2-amine.

12- Process for the preparation of compounds of formula (I) according to claim 1,

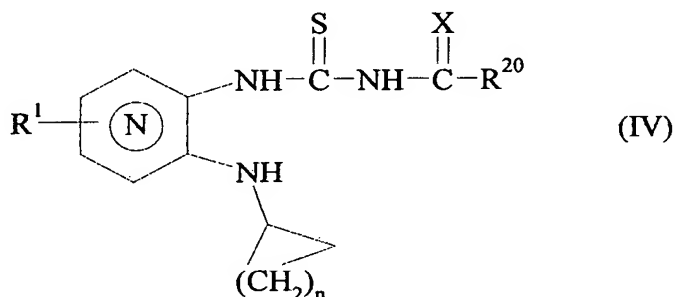
characterised in that there is used as starting material a compound of formula (II):



wherein  $R^1$  and  $n$  are as defined for formula (I), which compounds of formula (II) are condensed with isothiocyanate compounds (III):

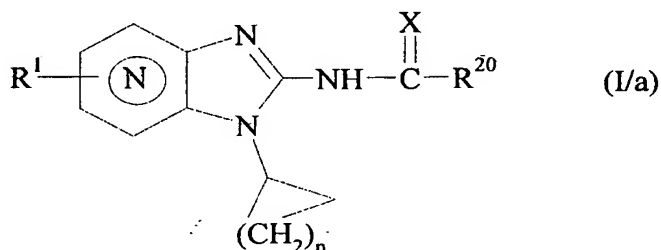


wherein  $X$  and  $R^{20}$  are as defined for formula (I), to yield the intermediates of formula (IV):



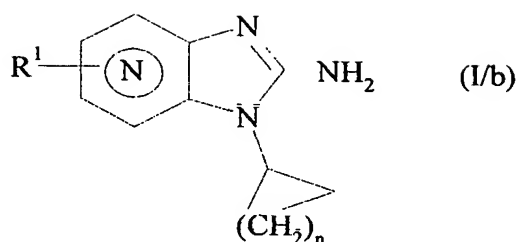
wherein  $R^1$ ,  $n$ ,  $X$  and  $R^{20}$  are as defined for formula (I),

10 which compounds of formula (IV) undergo intramolecular cyclisation in a basic medium and in the presence of a suitable catalyst to yield the compounds (I/a):



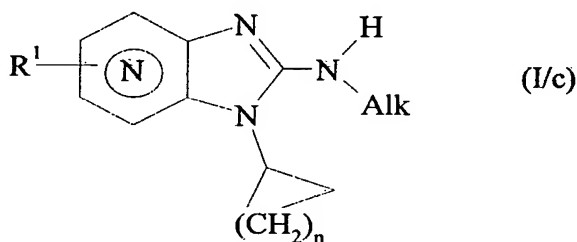
which are particular cases of the compounds of formula (I) wherein  $R^1$ ,  $n$ ,  $X$  and  $R^{20}$  are as defined for formula (I),

15 which compounds of formula (I/a) are optionally converted, in an acid medium, into compounds of formula (I/b):



which are particular cases of the compounds of formula (I) wherein  $R^1$  and  $n$  are as defined for formula (I),

5 in which compounds of formula (I/b) the amine function can be functionalised in a basic medium, with the aid of an alkyl halide  $Alk-Z$  (wherein  $Alk$  represents an alkyl group and  $Z$  represents a halogen atom), to yield the compounds of formula (I/c):



which are a particular case of the compounds of formula (I) wherein  $R^1$  and  $n$  are as defined for formula (I) and  $Alk$  is as defined hereinbefore,

10 which compounds of formulae (I/b) and (I/c) may, in a basic medium, optionally in the presence of suitable catalysts, be reacted with  $R^2 - Z'$  (wherein  $R^2$  is as defined for formula (I) and  $Z'$  represents a nucleofugal group, such as a halogen atom or a trihaloalkyl group) to yield the compounds of formula (I),

15 which compounds (I/a), (I/b) and (I/c) constitute the totality of the compounds of formula (I) and:

- which may, where necessary, be purified according to a conventional purification technique,
- which are separated, where necessary, into the stereoisomers according to a conventional separation technique,
- 20 - which are converted, if desired, into their addition salts with a pharmaceutically acceptable acid or base,

it being understood that:

- at any time considered to be appropriate in the course of the process described above, for the requirements of synthesis the carbonyl, amino or alkylamino group(s) of the starting reagents (II) and (III) may be protected and then, after condensation, deprotected,
- 5 - the reagents (II) and (III) are prepared according to known procedures described in the literature.

**13-** Pharmaceutical composition comprising as active ingredient at least one compound according to any one of claims 1 to 11, alone or in combination with one or more inert, non-toxic, pharmaceutically acceptable excipients or carriers.

- 10 **14-** Pharmaceutical composition according to claim 13 comprising at least one active ingredient according to any one of claims 1 to 11, for use in the manufacture of medicaments for use as an AMPK activator.

- 15 **15-** Pharmaceutical composition according to claim 13 comprising at least one active ingredient according to any one of claims 1 to 11, for use in the manufacture of medicaments that treat non-insulin-dependent, type II diabetes, obesity, type I diabetes, hyperlipidaemia, hypercholesterolaemia and their cardiovascular complications.

**16-** Pharmaceutical composition according to claim 13 comprising at least one active ingredient according to any one of claims 1 to 11, for use in the manufacture of medicaments that treat type I and II diabetes and its cardiovascular complications.

- 20 **17-** Pharmaceutical composition according to claim 13 comprising at least one active ingredient according to any one of claims 1 to 11, for use in the manufacture of medicaments that treat type I and II diabetes.